

Wafer Heater Assembly

ABSTRACT OF DISCLOSURE

A wafer heating assembly is described having a unique heater element for use in a single wafer processing systems. The heating unit includes a carbon wire element encased in a quartz sheath. The heating unit is as contamination-free as the quartz, which permits direct contact to the wafer. The mechanical flexibility of the carbon 'wire' or 'braided' structure permits a coil configuration, which permits independent heater zone control across the wafer. The multiple independent heater zones across the wafer can permit temperature gradients to adjust film growth/deposition uniformity and rapid thermal adjustments with film uniformity superior to conventional single wafer systems and with minimum to no wafer warping. The low thermal mass permits a fast thermal response that enables a pulsed or digital thermal process that results in layer-by-layer film formation for improved thin film control.